

REMARKS

STATUS OF CLAIMS

Claims 1-37 are pending.

Claims 1-3, 14-21 and 32-37 are rejected.

Claims 4-13 and 22-31 are objected to but are indicated to be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

By this Amendment claims 2, 20 and 35-37 are cancelled without prejudice, claims 1, 3-11, 19, 21-29 and 32-34 are amended and new claims 38 and 39 are added. Therefore, claims 1, 3-19, 21-34 and 38-39 are now under consideration.

No new matter is presented by the claim amendments and new claims, accordingly, entry and approval of same are submitted to be proper and are respectfully requested.

ALLOWABLE SUBJECT MATTER

In the Action at page 6, item 6, claims 4-13 and 22-31 are indicated to be allowable if rewritten in independent form including the limitations of the base claim and any intervening claims.

Claims 4-11 and 22-29 have been amended to only improve form. Moreover, claims 4-13 and 22-31 have not been rewritten in independent form, since it is submitted that claims 1 and 19 from which these claims depend are allowable.

Reconsideration of the objection is respectfully requested.

ITEM 2: REJECTION OF CLAIMS 1-2, 14-15, 17-20, 32-33, AND 35-37 UNDER 35 U.S.C. §102(b)

In the Action at pages 2 and 3, item 2, claims 1-2, 14-15, 17-20, 32-33, and 35-37 are rejected under 35 U.S.C. §102(b) as being anticipated by Ishikawa (U.S. Patent No. 5,717,510).

Reconsideration is respectfully requested.

Claim 1

Claim 1 is directed to a transmission characteristic equalizing system and recites "the

transmission characteristic control unit calculates an optimum allocation between a controlled variable of the amounts of pre-emphasis in the transmitting station and a controlled amount of the transmission factor versus wavelength characteristic of the optical tunable filter and controls the amounts of pre-emphasis and the transmission factor versus wavelength characteristic according to the optimum allocation to thereby equalize and optimize the transmission characteristics," which is the subject matter of original claim 2 and now incorporated into claim 1.

The present invention recited in claim 1 includes patentably distinguishing features, in which the transmission characteristics respectively associated with all the wavelength division multiplex (WDM) optical signals (i.e., wavelengths respectively associated with these optical signals which differ from one another) are equalized by controlling both the "pre-emphasis in the transmitting station" and "wavelength dependent transmission characteristics of a tunable optical filter."

Moreover, in the system of the present invention recited in claim 1, control is performed according to the above-described "optimum allocation" and enables a uniquely associated benefit, of not only equalizing the transmission characteristics but also optimizing the transmission characteristics.

Ishikawa et al. Reference

In the Action at page 3, lines 2-8, the Examiner contends that Ishikawa et al. teaches:

the transmission characteristics control unit calculates optimum allocation between a controlled variable of the amount of pre-emphasis (column 19 lines 17-21) in the transmitting station and a controlled amount of the transmission factor versus wavelength characteristic of the optical tunable filter (column 12 lines 7-14) and controls the amount of pre-emphasis and the transmission factor versus wavelength characteristic according to the optimum allocation to thereby equalize and optimize the transmission characteristics (optimization described in column 11 lines 54-62 and matching of wavelengths described in column 12 line 14).

Applicants respectfully disagree with the Examiner because the above-cited portions of Ishikawa et al. does not disclose or suggest a calculation that is recited in claim 1 to obtain the optimum allocation between a controlled variable of the amounts of pre-emphasis in the transmitting station and a controlled amount of the transmission factor versus wavelength characteristic of the optical tunable filter.

Ishikawa discloses, at column 11, lines 54-62 and column 12, line 14, respectively controlling "the emission wavelength of the tunable light source" and "the wavelength transmission characteristics of the tunable filters" but is silent with regard to deriving the optimum allocation (see for example the present specification at page 8, lines 12-14: "... the allocation that allows pre-emphasis control and the wavelength characteristic control to be carried out most effectively ...") and performing a control accordingly to the optimum allocation. According to Ishikawa, for example, in the system shown in Fig. 4, the features being controlled are the optical wavelengths output from the light source 44 of the transmitting station 41 and the wavelength transmission characteristic of the tunable filter 50. It is irrelevant to contemplate an allocation of the associated control amount between these two separate components.

In contrast to the present invention recited in claim 1, Ishikawa neither discloses nor suggests features to equalize transmission characteristics respectively associated with all the WDM optical signals. Furthermore, in contract to the present invention recited in claim 1, the particular benefit of equalizing and optimizing the transmission characteristics is not even suggested by Ishikawa, since Ishikawa is not concern about "an optimum allocation."

Accordingly, claim 1 is submitted to patentably distinguish over the cited art and to be allowable.

Claims 2, 14-15, 17-20, 32-33, and 35-37

Claim 19, for reasons similar to those of claim 1, is submitted to be allowable.

Claims 14-15, 17-18 and 32-33, which depend from claims 1 and 19, are submitted to be allowable for at least the same reasons as claims 1 and 19, as well as for the additional recitations therein.

Claims 2, 20, and 35-37 have been cancelled without prejudice and, thus this rejection under 35 U.S.C. §102(b) related thereto is now moot, the subject matter of claims 2 and 20 being incorporated into claims 1 and 19, respectively.

ITEM 4: REJECTION OF CLAIMS 3 AND 21 UNDER 35 U.S.C. §103(a)

In the Action at pages 4 and 5, item 4, claims 3 and 21 are rejected under 35 U.S.C. §103(a) as being unpatentable over Ishikawa.

Applicants respectfully traverse this rejection and request reconsideration.

Claims 3 and 21, which depend from claims 1 and 19, respectively, are submitted to patentably distinguish over Ishikawa for at least the same reason as claims 1 and 19, as well as for the additional recitations therein. For example, claims 3 and 21 are submitted to include further patentably distinct features beyond those of claims 1 and 19, respectively.

Lack of Proper Motivation to Modify Ishikawa Reference

In the Action at page 4, lines 10-18, the Examiner concedes that

Ishikawa fails to specifically teach that the transmission characteristic control unit first controls only the transmission factor versus wavelength characteristic of the optical tunable filter to temporarily equalize the transmission characteristics for the optical signals, then calculates the optimum allocation with reference to the transmission factor versus wavelength characteristic of the optical tunable filter at the time of temporal equalization of the transmission characteristics."

However, in the Action at page 4, lines 18 to page 5, line 15, the Examiner contends that:

one skilled in the art would clearly have recognized that the order of control for the system of Ishikawa could have been varied so that the transmission characteristic control unit first controls only the transmission factor versus wavelength characteristic of the optical tunable filter to temporarily equalize the transmission characteristics for the optical signals, then calculates the optimum allocation with reference to the transmission factor versus wavelength characteristic of the optical tunable filter at the time of the temporal equalization of the transmission characteristics, and controls both the transmission factor versus wavelength characteristic of the optical tunable filter and the amounts of pre-emphasis in the transmitting station according to the optimum allocation of control to equalize and optimize the transmission characteristics. One skilled in the art would have been motivated to tune the filter, calculate the optimum allocation, then control the transmitter and filter according to the calculated allocation in order to base the pre-emphasis of the transmitter on the transmission factor versus wavelength characteristic of the tunable filter at a specific period of time, thereby establishing a baseline from which adjustments could be made. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to allow the transmission characteristic control unit to first control only the transmission factor versus wavelength characteristic of the optical tunable filter to temporarily equalize the transmission characteristics for the optical signals, then calculate the optimum allocation with reference to the transmission factor versus wavelength characteristic of the optical tunable filter at the time of the temporal equalization of the transmission characteristics, then control both the transmission factor versus wavelength characteristic of the optical tunable filter and the amounts of pre-emphasis in the transmitting station according to the optimum allocation of control to equalize and optimize the transmission characteristics.

"[T]he mere fact that a worker in the art could rearrange the part of the reference device to meet the terms of the claims on appeal is not by itself sufficient to support a finding of obviousness. The prior art must provide a motivation or reason for the worker in the art, without the benefit of appellant's specification, to make the necessary change in the reference device." See Ex parte Chicago Rawhide Mfg. Co., 223 USPQ 351, 353 (Bd. Pat. App. & Inter. 1984).

A prima facie obviousness rejection requires that the modification of one reference be based on motivation evidenced in the record. The cited art does not suggest any motivation to modify Ishikawa et al. to calculate the optimum allocation. Thus, a rejection based on the rationale given by the Examiner is improper.

Accordingly, claims 3 and 21 are submitted to recites patentable distinctions, which are beyond those of claims 1 and 19 from which claims 3 and 21 depend, and to be allowable for those patentable distinctions.

ITEM 5: REJECTION OF CLAIMS 16 AND 24 UNDER 35 U.S.C. §103(a)

In the Action at pages 5-6, item 5, claims 16 and 24 are rejected under 35 U.S.C. §103(a) as being unpatentable over Ishikawa in view of Terahara (U.S. Patent No. 6,219,176).

Applicants respectfully traverse this rejection and request reconsideration.

It is submitted that the additional reference of Terahara does not overcome the deficiencies of Ishikawa et al. because Terahara does not disclose or suggest "the transmission characteristic control unit calculates an optimum allocation between a controlled variable of the amounts of pre-emphasis in the transmitting station and a controlled amount of the transmission factor versus wavelength characteristic of the optical tunable filter..." (as recited in claim 1 and similarly recited in claim 19). This is because Terahara, which is relied on by the Examiner to show the transmission of a signal from a transmitter to downstream elements, is silent regarding "an optimum allocation between a controlled variable ... and a controlled amount ..." (emphasis added; as recited in claim 1 and similarly recited in claim 19).

NEW CLAIMS 38 AND 39

New claims 38 and 39 are provided to afford a varying scope of protection and are submitted to be allowable for reasons similar to those of claims 1 and 19, respectively.

CONCLUSION


There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.


If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,
STAAS & HALSEY LLP

Date: 1/6/09

By: 
Eric Berkowitz
Registration No. 44,030

1201 New York Avenue, NW, Suite 700
Washington, D.C. 20005
Telephone: (202) 434-1500
Facsimile: (202) 434-1501

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STAAS & HALSEY
By: 
Date: 1/6/09